U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-050-EA

CASEFILE/PROJECT NUMBER (optional):
COC-65144 (#12C-19-4S-103W),
COC-10179 (#3-2-4-104WD, #13-12-4-104, NAV #13-12-4-104 WD, #43C-14-4S-104W),
COC-7868 (#6C-13-4S-104W, #9-13-4-104WD),
COC-10700 (#5C-23-4S-104W, #11C-25-4S-104W, #42C-26-4S-104W)

PROJECT NAME: APDs for 10(ten) coal bed natural gas wells

LEGAL DESCRIPTION: 6th P.M.,

Township	Range	section	well #
4S	104W	NENW 2, lot3	3-2-4-104 WD,
4S	104W	SENE 13	9-13-4-104 WD,
4S	104W	NWNW 12	13-12-4-104 WD,
4S	104W	NWSW 12	NAV 13-12-4-104 WD,
4S	104W	SENE 26	42C-26-4S-104W,
4S	104W	NWSW 23	5C-23-4S-104W,
4S	104W	NWNW 25	11C-25-4S-104W,
4S	104W	NESE 14	43C-14-4S-104W,
4S	104W	NESW 13	6C-13-4S-104W,
4S	103W	SWNW 19, lot 8	12C-19-4S-103W

APPLICANT: Pioneer Natural Resources USA, Inc.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/introduction: On sites were conducted on 12/07/05 and 12/08/05.
Work is planned to begin upon approval of application.

Proposed Action: The applicant proposes to construct 10 well pads, access roads and associated pipelines. Acres of surface disturbance associated with each well are shown in the following table:

Well #	Pad Size	Access Road	Pipeline	Total Acres
CS Federal # 3-2-4-104 WD(re-entry on reclaimed well pad & access road)	300'x 160'(1.3ac) w/100'x 80' reserve pit	1848' x 30'(1.3ac)	5027'x 50' (5.8ac.)	8.4
CS Fed # 9-13-4-104 WD(re-entry on reclaimed well pad & access road)	350'x 210' (1.7ac.)	528' x 30' (.36 ac.)	6980'x 50' (8 ac.)	10.06
CS Fed #13-12-4-104 WD(re-entry on reclaimed well pad & access road)	300'x 160'w/100'x 80' reserve pit (1.3 ac.)	150' x 30'(0.1 ac)	175'x 50'(0.2 ac)	1.6
CS Fed NAV # 13-12-4-104 WD	325'x 200' w/50'x120' reserve pit (1.63 ac)	40' x 30' (0.03 ac.)	58'x 50' (0.07ac.)	1.73
CS Fed # 42C-26-4S-104W	300'x 160'w/100'x 80' reserve pit (1.3 ac.)	3568' x 30' (2.46 ac.)	3568'x 50' (4.1 ac.)	7.86
CS Fed # 5C-23-4S-104W	270'x 135' w/140'x 30' reserve pit (0.94 ac.)	2251' x 30' (1.6 ac.)	2251' x 50' (2.6 ac.)	5.14
CS Fed # 11C-25-4S-104W	300'x 160'w/100'x 80' reserve pit (1.3 ac.)	0' **	0' **	1.3
CS Fed # 43C-14-4S-104W	300'x 160'w/100'x 80' reserve pit (1.3 ac.)	0' **	0' **	1.3
CS Fed #6C-13-4S-104W	300'x 160'w/100'x 80' reserve pit (1.3 ac.)	8070' x 30' (5.6 ac.)	7500' x 50' (8.6 ac.)	15.5
CS Fed #12C-19-4S-103W	270'x 135' w/140'x 30' reserve pit (0.94 ac.)	3098' x 30' (2.1 ac.)	3098' x 50' (3.6 ac.)	6.62
			TOTAL ACRES	**59.51**

** well pad located on portion of existing pad

The following is a list of applicant committed mitigation:

- Existing roads will be maintained and kept in good repair during all drilling and completion operations associated with wells.
- Existing roads and newly constructed roads on surface under the jurisdiction of any Surface Management Agency (SMA) shall be maintained in accordance with the standards of the SMA.
- Culverts, low water crossings, and cattleguards will be installed as required by SMA.
- If necessary due to inclement weather, surfacing material will be applied to access roads and well pads.
- All permanent structures (onsite for six months or longer) constructed or installed will be painted a flat, non-reflective, Juniper Green color to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee. All facilities will be painted within six months of installation. Facilities required complying with the Occupational Safety and Health Act (OSHA) will be excluded.
- Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids.
- The berms must be constructed to contain a minimum of 110% of the storage capacity of the largest tank within the berm.
- All loading lines will be placed inside the berm.
- All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

- Any production pits will be fenced with at least four strands of barbed wire and held in place by side posts and corner H-braces.
- All access roads will be upgraded and maintained as necessary to prevent erosion and accommodate year round traffic.
- Any necessary pits will be fenced to prevent wildlife entry.
- The reserve pit will be properly backfilled and will not be used for production operations.
- Water will be trucked from a private source in Rangely or Bonanza, or from produced water on lease.
- Water will be pumped or hauled to the location along the approved access road.
- No water wells are to be drilled.
- Surface and subsoil materials in the immediate area will be utilized for construction.
- No construction materials will be removed from Federal lands.
- Where surfacing material is needed for the access road, it will be obtained from the spoil material in the reserve pit.
- Any materials to be used which are under BLM jurisdiction shall be approved in advance, as per CFR 3610.2-3.
- Drill cuttings are to be contained and buried in the reserve pit.
- Trash and garbage will be contained in closed receptacle.
- Burning and/or burying is not authorized unless previously approved by the Authorized Officer during winter conditions.
- Contents from trash receptacle will be hauled to an approved landfill.
- Reserve pit fluids will evaporate or authorization for removal and disposal will be requested from the AO prior to backfilling the reserve pit.
- The salts and/or chemicals which are an integral part of the drilling system will be disposed of in the same manner as the drilling fluid.
- A chemical porta-toilet will be furnished with the drilling rig.
- The produced fluids will be produced into a test tank until such time as construction of production facilities is completed.
- Any spills of oil, gas, salt water or other produced fluids will be cleaned up and removed.
- No camps, air strips or other facilities will be necessary.
- Approximately 6 inches of topsoil will be stripped from this location and stockpiled at each location.
- Due to the fresh water and air mist drilling, a pit liner will not be necessary.
- Excavation of the reserve pit will require that one-half the fluid capacity is below the ground level.
- Reserve and produced water pits containing oily residue must be overhead flagged.
- These pits must be fenced with 28”, sheep tight mesh wire with two strands of barbed wire above and separated by approximately 6”.
- The reserve pit must be fenced on three sides during drilling; the fourth side must be fenced immediately after the rig is released.
- Berms will be required to keep runoff water out.
- A minimum of 2’ of freeboard will be maintained between the maximum fluid level and the top of the berm.
- The fourth side will be fenced as soon as the drill is completed.
- The fence will be kept in god repair while the pit is drying.

- The flare pit will be similarly fenced.
- The flare pit will have a 10' high dirt back stop.
- Flare pit fluids will drain via a trench to the reserve pit.
- Immediately upon completion of drilling, all trash and debris will be collected from the location and surrounding area.
- All trash and debris will be disposed of in the trash cage and will then be hauled to an approved landfill.
- The reserve pit fluids will be allowed to evaporate through one entire summer season (June-August) after drilling is completed, unless an alternate method of disposal is approved.
- After the fluids disappear, the reserve pit muds will be allowed to dry sufficiently to allow backfilling.
- The backfilling of the reserve pit will be completed within 30 days after dry conditions exist and will meet the following requirements:
    1. Backfilling will be done in such a manner that the muds and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.
    2. There will be a minimum of 5 feet of cover (overburden) on the pit.
    3. When the work is completed, the pit area will support the weight of heavy equipment without sinking and over time shall not subside over 6 inch depth.
- The White River Resource Area office will be given 48 hour notification prior to construction and prior to any backfilling and/or recontouring activities.
- Reclamation will be done as requested by the BLM.
- Interim reclamation may include replacement of topsoil immediately following the end of completion operation.
- In the event a producing well is completed, the unused areas of the well location will be recontoured to appropriate configuration (that allows lease operations and alleviates steep cut and fill slopes, minimizing accelerated erosion).
- Some of the stockpiled topsoil will be redistributed over the unused area and seeded with an approved seed mixture.
- This will be done the fall season after proper backfilling of the reserve pit has occurred. A seed mixture will be provided by the BLM in the Conditions of Approval, or prior to reclamation.
- In the event of a dry hole, the location will be recontoured to the original grade, top soiled, seeded with an approved seed mixture.
- The stockpiled brush and topsoil will be evenly distributed over the location.
- All pits, cellars, rat holes and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be backfilled immediately after the drilling rig is released.
- Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit.
- The lessee/operator is required to use the reclamation practices necessary to reclaim all disturbed areas.
- Reclamation will ensure surface and subsurface stability, growth of a self-regenerating permanent vegetative cover and compatibility with post land use.
- The vegetation will be diverse and of the same seasonal growth as adjoining vegetation.

- Post land use will be determined by the AO but normally will be the same as adjoining uses.
- Submission of the Final Abandonment Notice (FAN) will include the data collected and used to determine this reclamation standard has been met.
- Waste materials will be disposed of as stated in #7 of this Surface Use Plan.
- Control of noxious weeds will be required through successful vegetation establishment and/or herbicide application.
- Application of herbicides are prescribed, however, it is the responsibility of the lease operator to insure compliance with the local, state and Federal laws and regulations, as well as labeling directions specific to the use of any given herbicide.
- All contractors employed to perform work on the locations will be furnished and have on site, a copy of the Surface Use Program and a copy of any supplemental conditions.
- The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the Authorized Officer (AO). Within five working days the AO will inform the operator as to:
    1. whether the materials appear eligible for the National Register of Historic Places;
    2. the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
    3. -a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the finding of the AO are correct and that mitigation is appropriate.
- A Class III archeology survey will be conducted by Grand River Institute.
- A copy of this report will be submitted directly to the appropriate agencies by Grand River institute.
- All state and local permits required for proposed operations will be obtained prior to commencing any activity that may be affected by such authorization.

No Action Alternative: No well pads, access roads or pipelines would be constructed and no environmental impacts would occur.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None

NEED FOR THE ACTION: To respond to the request by the applicant to construct access road, well pad, and install pipelines.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: "Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values."

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM_{10}) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction due to the combustion of fossil fuels associated with construction and drilling operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than $PM_{10.}$ Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter ($\mu g/m^3$). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$ (CDPHE-APCD, 2005).

Environmental Consequences of the Proposed Action: Cumulative impacts detrimental to air quality south of Rangely, CO can be expected as carbon monoxide, ozone (secondary

pollutant), nitrogen dioxide, particulate matter, and sulfur dioxide levels are elevated due to increased oil and gas development. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM_{10}) during construction. Elemental and organic carbon existing in the air as PM_{10} can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust), vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing the roadway with gravels will also help mitigate production of fugitive particulate matter.

To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soils associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilize on slopes exceeding 5% (e.g. fill slopes). If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

CULTURAL RESOURCES

Affected Environment: The proposed action has been inventoried at the Class III (100% pedestrian) level. The table below identifies the findings

CS Fed Well #, Access Route & Pipeline	Inventory Date	Compliance Dated	Findings
CS Fed. #9-13-4-104WD	Salisbury and Bott 2005	1/27/2005	no cultural resources identified
#3-2-4-104	Salisbury and Bott 2005	1/27/2005	one site and one isolated find located
#13-12-4S-104W	Salisbury and Bott 2005	2/18/2005: Brogan 2004; 5/25/2004	one site located at the edge of the ten acre inventory area
#12C-19-4S-103W	Conner and Davenport 2006	1/26/2006	one resource located near the edge

CS Fed Well #, Access Route & Pipeline	Inventory Date	Compliance Dated	Findings
			of the ten acre inventory block
Nav #13-12-4-104 WD	Burkard 2006	3/23/2006	with no cultural resources identified
#6C-13-4S-104W	Conner and Davenport 2006	1/26/2006	one site located along the edge of the area inventoried for the well pad
#5C-23-4S-104W	Conner and Davenport 2006	1/26/2006	no cultural resources identified
#11C-25-4S-104W	Conner and Davenport 2006	1/26/2006	no cultural resources identified
#42C-26-4S-104W	Conner and Davenport 2006	1/26/2006	no cultural resources identified
#43C-14-4S-104W	Montgomery and Ball 2001	7/11/2001	three sites located along the proposed the access route

Environmental Consequences of the Proposed Action: Proposed wells Fed. #9-13-4-104WD, Nav #13-12-4-104WD, #5C-23-4S-104W, #11C-25-4S-104W, #42C-26-4S-104W, and access routes: the proposed well pad and access road will not impact any known cultural resources.

Proposed wells #13-12-4S-104W, #12C-19-4S-103W, #43C-14-4S-104W, #6C-13-4S-104W, and access routes: If mitigation measures are strictly adhered to there will be no impacts to known cultural resources

Proposed Well #3-2-4-104 and access route: The site and isolated find located in the inventoried area are not considered NRHP eligible. The site 5RB 1777 has been previously impacted by construction of a pipeline. The proposed project will no have a significant negative impact to the known cultural resources data base as the sites have had all pertinent data recovered during recordation.

Environmental Consequences of the No Action Alternative: None

Mitigation: In addition to the applicant committed mitigation: 1. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

2. For Proposed action associated with well #12C-19-4S-103W: Site 5RB 5195 shall be avoided by all construction and maintenance activity associated with the drilling and operations of the 12C-19-4S-103W well pad.

3. For Proposed action associated with well #13-12-4S-104W: Site 5RB 4948 must be strictly avoided. All personnel work activity associated with this pad for the life of the well are strictly limited to the pad location only.

4. For Proposed action associated with well 43C-14-4S-104W: Sites 5RB 4308, 4309 and 4310 must be avoided by all construction and maintenance associated with the construction of the access road and well pad. Pioneer and its successor and/or assigns will be responsible for ensuring the

integrity of the sites in not compromised or damaged as a result of their development.

5. For Proposed action associated with well #6C-13-4S-104W: Site 5RB 5194 must be avoided by all construction and maintenance associated with the well pad for the life of the pad. Pioneer and its successors or assigns will be responsible for ensuring that the integrity of the site is not compromised for the life of the well.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Several noxious weed species have been found in the area including Russian and spotted knapweed, bull and musk thistle, hoary cress and cheatgrass. The outbreaks of knapweed were on well pads and were probably transported on site by construction equipment or support vehicles.

Environmental Consequences of the Proposed Action: Using the proposed seed mix should establish quickly and stabilize soils. The seed mix contains non-native species and these are recommended because of the harsh environmental conditions. The recommended species have not been shown to hybridize with adjacent plant species or to move offsite. Controlling noxious weeds as described by mitigation would prevent noxious weed species from moving off-site and establishing in the adjacent plant communities.

Environmental Consequences of the No Action Alternative: There would be no impacts.

Mitigation: The fall of 2005 reports were received that an unspecified knapweed had been located in Davis Canyon and was associated with field development. The operator is responsible for inventorying roads, pipelines and pads within their unit for noxious weeds and providing BLM with a report identifying species present, location and size of infestation, prior October 1, 2006.

From the White River ROD/RMP of 1997, Appendix B, Application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

Seeded species used in reseeding disturbed areas will be based on the seed mixes identified in table B1 and B2. These mixes are based on range sites as determined by soils. Use Standard Seed Mix #2 listed below.

Table B-1. Standard Seed Mixes

Seed Mix #	Species (Variety)	Lbs PLS/ Acre	Range sites
2	Western wheatgrass (Arriba) Pubescent wheatgrass (Luna) Russian wildrye (Bozoisky) Crested wheatgrass (Fairway/Ephraim) Yellow sweetclover (Madrid) Fourwing saltbush (Wytana/Rincon)	3 2 2 2 0.5 2	Alkaline Slopes, Clayey Foothills, Clayey Slopes, Claypan, Mountain Shale

MIGRATORY BIRDS

Affected Environment: The sagebrush and pinyon-juniper communities found within the project area support a large array of migratory birds that nest during the months of May, June and July. Bird populations associated with these communities that have a high conservation interest (Rocky Mountain Bird Observatory, Partners in Flight program) include: Brewer's sparrow and green-tailed towhee (sagebrush) and pinyon jay, black-throated gray warbler, juniper titmouse, gray flycatcher and violet-green swallow. There are no specialized or narrowly endemic species known to occupy the project area.

Three of the proposed pads (3-2-4, 9-13-4, and 13-12-4) are located on previously disturbed sites. These areas typically assume little nesting activity due to lack of adequate vegetation available for foraging and/or nesting purposes.

Development of reserve pits that contain drilling fluids have attracted waterfowl use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November).

Environmental Consequences of the Proposed Action: Construction of well pads, their associated roads and pipelines for 6C-13, 12C-19, 5C-23 and 42C-26 would result in the direct loss of approximately 35 acres of mature pinyon-juniper woodlands. Construction during the migratory bird nesting season (May through July) would result in the loss of those nest located within the pad footprint and access/pipeline corridors and may result in the disruption of nests located adjacent to those pads and access routes. Based on recent literature and BLM's experience, it is expected that approximately 20 nest attempts by birds of higher conservation interest would be disrupted by the proposed action in the short term and population-level effects would be discountable even at the local landscape level. Although the proposed action would represent an incremental and longer term reduction in pinyon-juniper habitat, implementation of the proposed actions would have no measurable influence on the abundance or distribution of breeding migratory birds at any landscape scale.

It is unlikely the construction of well pads 3-2-4, 9-13-4, and 13-12-4 or the access roads and pipelines associated with 11C-25 and 43C-14 would have any substantive affect on nesting success of migratory birds. The conditions associated with these pads and pipelines (i.e., areas of degraded habitats or low shrub densities.) tend to reduce the utility of the sites for nesting by species of higher conservation interest and the subsequent probability of their sustaining strong nest densities. The minimal reduction in sagebrush habitats (~5 ac) would likely have no measurable affect on those associated species.

The development of reserve pits in the project area may be expected to attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of free water. It has recently been brought to this Field Office's attention that migratory waterfowl (i.e., teal and gadwall) have contacted oil-based drilling fluids stored in reserve pits during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be

conservative and relegated to preventing bird contact with produced water and drilling and completion fluids that may pose a problem (e.g., acute or chronic toxicity, compromised insulation).

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to disrupt the breeding activities of migratory birds or expose birds to fluids that pose a mortality risk.

Mitigation: It is recommended that pads 11C-25 and 43C-14 be constructed prior to 42C-26, 5C-23, 6C-13 and 12C-19. Delaying construction on those pads associated with mature pinyon-juniper woodlands (latter four) may potentially reduce nest failure during the breeding season.

It will be the responsibility of the operator to eliminate migratory bird access to reserve pits that store or are expected to store fluids that pose a risk to these birds (e.g., waterfowl, wading birds, raptors, and songbirds) during drilling and completion activities and until such pits are reclaimed. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird access to pit contents and meet BLM-approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to when drilling activities are expected to begin. The BLM approved method will be applied within 24 hours after drilling activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: There are no special status animal species that are known to inhabit or derive important benefit from the project area.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on special status animals or associated habitat.

Environmental Consequences of the No Action Alternative: The no-action alternative would have no conceivable influence on special status animals or associated habitat.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: The proposed action and no-action alternative would have no effective influence on populations or habitat associated with special status species.

THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)

Affected Environment: There are no special status plant species that are known to inhabit or derive important benefit from the project area.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on special status plants or associated habitat.

Environmental Consequences of the No Action Alternative: None

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: There is no reasonable likelihood that the proposed action or no action alternative would have an influence on the condition or function of Threatened, Endangered, or Sensitive plant species. Thus there would be no effect on achieving the land health standard.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed actions are situated entirely within the Evacuation Creek catchment area. Evacuation Creek is a tributary to the White River in Utah. The White River is a tributary to the Green River which is a tributary to the Colorado River. Sub-catchments affected by the proposed actions include: Davis Canyon (14.69 acres), Whiskey Creek (41.13 acres), Evacuation Creek (92.32 acres), and East Evacuation Creek (16.74 acres).

The upper reaches of Evacuation Creek are perennial while the lower reaches (near the Utah boarder) become intermittent. The intermittent nature of lower reaches in Evacuation Creek can likely be attributed to transitioning stream channel morphologic conditions. During the field season of 2005 the BLM collected Rosgen stream channel/bank geomorphic/morphologic data on the main stem of Evacuation Creek. During field observations it was apparent that recent channel incision had created disequilibrium between sediment supply and available flows. Unstable F and G Rosgen stream channel types are currently transitioning towards C channel types as functional point bars and flood plains are slowly being developed (Rosgen, D.L. 1996).

The upper reaches East Evacuation Creek are perennial while the lower reaches (near the confluence with Evacuation Creek) have become intermittent. The intermittent nature of the lower reaches in East Evacuation Creek also seem to be a result of a transitioning stream channel morphologic system in which recent incision has created disequilibrium between sediment supply an available flows. Like Evacuation Creek, East Evacuation Creek is dominantly characterized by F and G Rosgen channel types (Rosgen, D.L. 1996). However, the transition towards more stable channel types (e.g. C channel type) is less apparent in East Evacuation Creek.
Near the proposed actions, Davis Canyon and Whisky Creek are both ephemeral in nature and flow primarily in response to low elevation snowmelt and high intensity precipitation events.

The "Status of Water Quality in Colorado – 2004" plus the 2006 update (CDPHE, 2006b) were reviewed for information related to the proposed actions. The proposed project area is located entirely within stream segment 22 of the White River basin. The State has classified stream segment 22 as "Use Protected". The antidegredation review requirements in the Antidegredation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. Stream segment 22 has been further designated by the state as being beneficial for the following uses: Warm Aquatic Life 2, Recreation 1b, and Agriculture. For stream segment 22, minimum standards for four parameters have been listed. These parameters are: dissolved oxygen = 5.0 mg/l, pH = 6.5 - 9.0, Fecal Coliform = 325/100 ml, and 205/100 ml E. coli. (CDPHE, 2006b).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE, 2006c and 2006d, respectively) were also reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State's list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 list of segments needing development of TMDLs includes two segments within the White River - segment 9b, White River tributaries North & South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development) and segment 22, tributaries to the White River, Douglas Creek to the Colorado/Utah boarder, specifically West Evacuation Creek, and Douglas Creek (sediment impairments). Regulation 94 is the State's list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 and 22. West Evacuation Creek is situated upstream of the proposed actions. Thus, no impacts to any 303(d) or M&E listed streams will occur as a result of the proposed actions.

Ground water: A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed

actions. Information presented in Topper et al. (2003) indicates the extent of the Mesaverde aquifer (Cretaceous in age) encompasses the project area south of Rangely, CO. Water quality within the Cretaceous aged units of the Mesaverde aquifer are generally of poor water quality (highly saline).

Coal bed methane (CBM) wells tend to produce large volumes of ground water found in the gas producing zones. Water quality in the production zone is poor and generally TDS values exceed 7,000 ppm. Thus, disposal of produce water is a significant concern. Location #13-12 is an existing location that Pioneer is proposing to convert to injection. Discussion on the 12/7/2005 on-site indicated that the new injection well would test the capacity of the Navajo Sandstone for injection of produced water. Produced water from the proposed CBM wells would also be disposed of via existing injection wells (Pioneer #8-11, and #11-11) which target in the Castlegate Sandstone. Water quality in the formations targeted for injection is highly saline (TDS values exceed 10,000 ppm).

No springs or water wells were identified within one mile of any surface disturbing activities associated with the proposed actions.

Environmental Consequences of the Proposed Action: Surface Water: New surface disturbing activities associated with the proposed actions will increase soil exposure to erosional processes. New surface disturbance will destroy existing vegetation and increase compaction. Increased compaction combined with reduced vegetation will further decrease infiltration rates and elevate erosive potential due to runoff (overland flows) and raindrop impact during storm events. The onsite evaluation (12/7/05) reviled that the proposed access roads to location #5C-23 and #42C-26 are situated on fragile soils while nearly all surface disturbance located adjacent to Evacuation Creek was situated on saline soils (see soils section). Improper road design, maintenance, and reclamation may contribute to accelerated hill-slope soil erosion increasing sediment/salt loads to perennial reaches of Evacuation Creek. Accelerated erosion from improper drainage from well pads, access roads and pipelines may result in increased salt loads, likely adversely impacting the health of surrounding vegetation reducing effective ground leading to further soil instability and erosion.

Ground Water: Given the moderate-very high permeability rates of the affected soils (primarily soil units #74 and #95), leaks or spills of environmentally unfriendly substances are likely to be carried down gradient in local ground water (e.g. colluvium, alluvium, perched aquifers…). Contaminants being transported by local ground water may discharge into surface waters of the affected streams during wet periods and potentially deteriorating water quality.

With the primary means of produced water disposal being through subsurface injection, potential exists for produced water to contaminate ground water (e.g. localized alluvial, colluvial aquifers) if the formations targeted for injection are over pressured. However, given the depth of the injection wells and the permitting requirements applied by the state of Colorado Oil and Gas Conservation Commission (COGCC) for discharging produced water, adverse impacts to ground water resources are not anticipated.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, and Industrial Wastewater/Produced Water Permits). The operator will also be required to provide the BLM with documentation that all required permits were obtained.

Surface Water: All surface disturbing activities will strictly adhere to "Gold Book" fourth edition surface operating standards for oil and gas exploration and development (copies of the "Gold Book" fourth edition can be obtained at the WRFO). Oil and gas development activities require a stormwater discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division, for construction associated with well pads, pipelines, roads and other facilities. As a condition of the permit, a Stormwater Management Plan (SWMP) would be developed showing how Best Management Practices (BMPs) are to be used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office and to implement the BMPs in that plan as on-site conditions warrant.

The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant. Furthermore, to mitigate additional soil erosion at the well pad, interim reclamation will be required as outlined in the Air Quality mitigation section above.

Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of gas by installation and cementing of surface and intermediate casing. Produced water will be disposed of via subsurface injection into the Navajo and Castlegate sandstones due to poor water quality to mitigate potential adverse impacts on valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

Finding on the Public Land Health Standard for water quality: Stream segment 22 of the White River Basin below West Evacuation Creek is currently listed as meeting water quality standards set by the state. Following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: There are no wetlands or riparian habitats potentially influenced by the proposed action. Although pads 11C-25 and 13-12 are located in close proximity to Whiskey Creek and Evacuation Creek, both are ephemeral channels dominated by tamarisk and rabbitbrush with little to no riparian obligates.

Environmental Consequences of the Proposed Action: There is no reasonable probability of riparian conditions or function being potentially influenced by this action. Both channels involved contain little to no riparian obligates.

Environmental Consequences of the No Action Alternative: The no-action alternative would have no conceivable influence on wetland or riparian habitats.

Mitigation: None

Finding on the Public Land Health Standard for riparian systems: The riparian zones along Whiskey and Evacuation Creek near the proposed well pads are currently not achieving the required public land health standards for a riparian system. The actions proposed with development of theses well pads are not expected to create any positive or negative changes that would influence achieving health standards.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, WSA's, flood plains, prime and unique farmlands, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. The following table highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Soil Number	Soil Name	Affected Acres (w/in 30 m radius)	Slope	Ecological site	Salinity (mmhos/cm^2)	Run Off	Erosion Potential	Bedrock
10	Blazon, moist-Rentsac Complex	12.9	6-65%	Pinyon-Juniper woodland	2-4	Rapid	Moderate to very high	10-20

Soil Number	Soil Name	Affected Acres (w/in 30 m radius)	Slope	Ecological site	Salinity (mmhos/cm^2)	Run Off	Erosion Potential	Bedrock
41	Havre loam	11.98	0-4%	Foothill Swale	<4	Medium	Slight	>60
48	Kobar silty clay loam	21.76	3-8%	Deep Clay Loam	<2	Medium to rapid	Moderate	>60
53	Moyerson stony clay loam	4.38	15-65%	Clayey Slopes	2-4	Rapid	Very high	10-20
74	Rentsac-Moyerson-Rock Outcrop complex	66.94	5-65%	PJ Woodlands/ Clayey Slopes	<2	Medium	Moderate to very high	10-20
78	Rock Outcrop	1.79	50-100%	None		Very high	Slight	0
95	Uffens loam	45.11	0-5%	Alkaline Slopes	4-8	Slow	Moderate	>60

Given a 30 meter buffer, 45.63 acres (28% of all affected acreage) of control surface use (CSU-1) "saline soils" will be impacted by surface disturbing activities. CSU-1 "saline soils" will be encountered at the following locations: approximately the first ~917 meters of the proposed access road/pipeline to location #3-2, location #9-13 including approximately 2,017 meters of the proposed pipeline route, location #13-12. However, given the degree of previous surface disturbance in the area, lack of topography, and suggested mitigation, an engineered construction/reclamation plan will NOT be required for saline soils.

With a 30 meter buffer, 45.04 acres (27% of all affected acreage) of CSU-1 "fragile soils" have also been mapped that could potentially be impacted by the proposed actions. However, following an onsite evaluation and observation of a topographic map, only a portion of the mapped "fragile soils" actually occur on slopes greater than 35%. Any surface disturbing activities occurring CSU-1 "fragile soils" will require an engineered construction/reclamation plan to be approved by the Area Manager prior to surface disturbing activities. Locations that will require engineered construction/reclamation plans are as follows: location #5C-23 including access road/pipeline, location #42C-26 including access road/pipeline.

10-Blazon, moist-Rentsac complex (8 to 65 percent slopes) can be found on foothills and ridges. The native vegetation is mainly pinyon and juniper trees with an understory of brush and grasses. Elevation is 5,700 to 6,900 feet. The average annual precipitation is 15 to 17 inches, the average annual air temperature is 42 to 44 degrees F, and the average frost-free period is 80 to 105 days. The Blazon soil is shallow and well drained. It formed in residuum derived dominantly from shale. Typically, the upper part of the surface layer is brown channery loam about 4 inches thick. The lower part is brown channery clay loam about 7 inches thick. The underlying material is light yellowish brown shale clay loam about 5 inches thick. Soft shale is at a depth of 16 inches. Depth to soft shale ranges from 10 to 20 inches. Permeability of the Blazon soil is moderately slow.

Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam about 7 inches thick. Hard sandstone is a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

41-Havre loam (0 to 4 percent slopes) is a deep, well drained soil located on flood plains and low stream terraces. It formed in calcareous alluvium. The native vegetation is mainly low shrubs and grasses. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 14 to 17 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is light brownish gray loam 21 inches thick. The upper 19 inches of the underlying material is stratified, light gray loam and silty clay loam, and the lower part to a depth of 60 inches or more is stratified loam and sandy loam. In some areas the surface layer is clay loam of fine sandy loam. Permeability of the Havre soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight. Small areas of this soil are subject to brief periods of flash flooding late in the spring and in summer. If this unit is used for urban development, sanitary facilities, and roads, special designs are needed to compensate for the hazard of flooding. Buildings and roads should be designed to offset the limited ability of the soil in this unit to support a load.

48-Kobar silty clay loam (3 to 8 percent slopes) is a deep, well drained soil found on alluvial valley floors and on fans. It formed in calcareous alluvium derived dominantly from shale. The vegetation in areas not cultivated is mainly low shrubs and grass. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 85 to 105 days. Typically, the surface layer is grayish brown silty clay loam about 3 inches thick. The next layer is grayish brown silty clay loam about 9 inches thick. The underlying material to a depth of 60 inches or more is light brownish gray silty clay that has some gypsum crystals. In some areas the surface layer is clay loam or silty clay. Permeability of the Kobar soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium to rapid, and the hazard of water erosion is moderate. This unit is poorly suited to urban development. The main limitations are the potential for shrinking and swelling and slow permeability.

53-Moyerson stony clay loam (15 to 65 percent slopes) is a shallow, well drained soil located on ridges and side slopes of dissected plateaus. It formed in residuum derived from calcareous shale. The native vegetation is mainly grasses and low shrubs. Elevation is 5,600 to 7,300 feet. The average annual precipitation is 13 to 16 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 85 to 105 days. Typically, 5 to 20 percent of the surface is covered with stones, flagstones, and boulders. The surface layer is light gray stony clay loam 2 inches thick. The next layer is light gray clay loam 8 inches thick. The underlying material is light gray clay about 7 inches thick. Fractured shale is at a depth of 17 inches. Depth to shale

ranges from 10 to 20 inches. The soil is calcareous throughout. Permeability of this Moyerson soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is very high.

74-Rentsac-Moyerson-Rock outcrop complex (5 to 65 percent slopes) is found on foothills and ridges. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and grasses. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 13 to 16 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 75 to 105 days. This unit is 40 percent Rentsac channery loam that has slopes of 5 to 50 percent, 25 percent Moyerson stony clay loam that has slopes of 15 to 65 percent, and 20 percent Rock outcrop that has slopes of 5 to 65 percent. The Moyerson soil is mainly in the lower lying areas of the unit. The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam 7 inches thick. Sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to very high.

The Moyerson soil is shallow and well drained. It formed in residuum derived dominantly from shale. Typically, the surface layer is light gray stony clay loam about 2 inches thick. The next layer is gray clay loam about 8 inches thick. The underlying material is gray clay 7 inches thick. Shale is at a depth of 17 inches. Depth to shale ranges from 10 to 20 inches. In some areas the surface layer is silty clay loam, silty clay, light clay, or bouldery clay loam. Permeability of the Moyerson soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is very high. This unit is poorly suited to urban development. The main limitations are steepness of slope and the shallow depth to bedrock.

78-Rock outcrop (50-100 percent slopes) is situated on mountains, in canyons, and on ridges, hills, and upland breaks. It consists of barren exposures of sandstone, hard shale, siltstone, or limestone. Elevation is 5,100 to 9,600 feet. The average annual precipitation is 8 to 20 inches, the average annual air temperature is 38 to 50 degrees F, and the average frost-free period is 45 to 130 days. This unit is 90 percent or more exposed bedrock with some soil material in the crevices and at the base of the slopes. Accumulations of boulder and stones are also common at the base of the slopes. Rock outcrop most commonly occurs as nearly vertical ledges and cliffs that are 3 to 50 feet high and 5 to 1,500 feet long.

95-Uffens loam (0 to 5 percent slopes) is a deep, well drained soil found on fans and low terraces. It formed in calcareous, saline alluvium. The native vegetation is mainly salt-tolerant shrubs and grasses. Elevation is 5,100 to 5,800 feet. The average annual precipitation is 7 to 10 inches, the average annual air temperature is 45 to 50 degrees F, and the average frost-free period is 105 to 130 days. Typically, the surface layer is very pale brown loam 2 inches thick. The upper 6 inches of the subsoil is light yellowish brown clay loam, and the lower 11 inches is very pale brown clay loam. The upper 5 inches of the substratum is light yellowish brown loam, and the next 4 inches is light yellowish brown loam, and the lower part to a depth of 60 inches or more is very pale brown

loam. Permeability of this Uffens soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is moderate. The soil is calcareous throughout.

Environmental Consequences of the Proposed Action: An overwhelming majority of the affected soils (92% of all affected soils) exhibit moderate to very high erosive potentials. Clearing of vegetation for construction activities will leave these soils exposed to erosional processes. Soils will exhibit lower infiltration and permeability rates after construction which will elevate erosive potential. Given the soil composition, improper drainage from access roads, well pads, and pipelines could lead to soil piping and large salt deposits which will hinder revegetation efforts. Any leaks or spills of environmentally unfriendly substances could contaminate soils also hindering revegetation efforts.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will comply with "Gold Book" fourth edition surface operating standards for constructing well pads, pipelines and access roads (copies of the "Gold Book" fourth edition can be obtained at the WRFO). Surface disturbing activities occurring on identified CSU-1 "fragile soils" (see affected environment) will be allowed only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. Interim reclamation will be required as addressed in the Air and Water Quality portions of this document. Vegetation removed for installation of pipelines will be promptly spread back over the disturbed area following construction and seeded as outlined in the vegetation section of this document. To mitigate contamination of soils and local ground water, environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of impermeable matting under equipment (tanks, pumps, or other equipment used in handling hazardous liquids) is suggested to intercept such contaminants prior to contacting soils. Given the salt concentration of the impacted soils (see affected environment), the operator will be responsible for monitoring salts leaching from soils. If large salt deposits begin to appear, the operator will notify BLM, together they will coordinate the application of best management practices to help mitigate the problem. Complete reclamation will follow abandonment of well pad. Access roads, pipelines, and well pads will be recontoured and 100% of disturbed surfaces will be revegetated with the suggested seed mixture as outlined in the vegetation section of this document.

Finding on the Public Land Health Standard for upland soils: Most of the affected soils within the proposed project area currently meet standards for upland soil health. However, areas identified as being in early seral states which are dominated by undesirable plant species such as cheat grass (see Invasive, Non-Native Species and Vegetation portions of this document) do not meet standards. In these areas, cheatgrass is the dominant component of the understory and severely reduces infiltration and permeability rates, which can lead to accelerated soil loss.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The proposed development is located on three vegetation types based on the soil association maps of Rio Blanco County. The potential plant community for soil

association 74 is pinyon, Utah juniper with a sparse understory of Indian ricegrass, beardless wheatgrass, mountain mahogany, big sagebrush, prairie junegrass and bitterbrush. The pinyon/juniper sites contain old growth characteristics of large trees with sparse understory and suppressed regrowth. The potential plant community for soil association 95 (greasewood bottom) is big sagebrush, greasewood, galleta, western wheatgrass, sand dropseed and bottlebrush squirreltail. Generally these bottom sites are in low-seral stage relative to the climax communities. This is the result of past livestock grazing practices which were through the growing season. The potential plant community for soil association 41 (upland sage and sage bottom) is basin wildrye, western wheatgrass, streambank wheatgrass, bluegrasses and big sagebrush. Listed in the table below are the acres of new disturbance with associated plant communities.

CS Federal Well #	Well Pad (Acres)	Access Road	Pipeline
	Plant Community	Plant Community	Plant Community
3-2-4-104 WD	None	None	None
9-13-4-104 WD	None	None	8.0
			Greasewood Bottom
13-12-4-104 WD	None	None	0.2
			Greasewood Bottom
13-12-4-104 WD	1.63	0.03	0.07
	Greasewood Bottom	Greasewood Bottom	Greasewood Bottom
42C-26-4S-104W	1.3	2.46	4.1
	Pinyon/Juniper	Pinyon/Juniper	Pinyon/Juniper
5C-23-4S-104W	0.94	1.6	2.6
	Pinyon/Juniper	Pinyon/Juniper	Pinyon/Juniper
11C-25-4S-104W	1.3	None	None
	Sage Bottom		
43C-14-4S-104W	1.3	None	None
	Upland Sage		
6C-13-4S-104W	1.3	5.6	8.6
	Pinyon/Juniper	Pinyon/Juniper	Pinyon/Juniper
12C-19-4S-103W	0.94	1.1	1.8
		Pinyon/Juniper	Pinyon/Juniper
	Pinyon/Juniper	1.0	1.8
		Upland Sage	Upland Sage
Totals	**8.71**	**11.8**	**27.17**

Environmental Consequences of the Proposed Action: Vegetation on the three described vegetation types would be removed during the life of the project. Following reclamation all these sites would be stabilized by reclamation within three years and would then revert back to the native vegetation. On the sagebrush associations it is expected that sage would be dominant within 20 years. The pinyon/juniper communities are expected to have seedling pinyon and juniper within 30 years and develop old growth characteristics between 150 and 300 years.

Environmental Consequences of the No Action Alternative: There would be no impacts.

Mitigation: Same as for Invasive/Non-native section and Range Management section.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* The sagebrush communities in the bottoms do not meet the standards for plant health. There is an abundance of cheatgrass which prevents growth during a portion of the season. The cheatgrass it that it dominates the area does not meet the standard.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: There is no aquatic wildlife or habitat potentially influenced by the proposed action. Although pads 11C-25 and 13-12 are located in close proximity to Whiskey Creek and Evacuation Creek, both are ephemeral channels which do not support aquatic wildlife.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on aquatic wildlife or habitat.

Environmental Consequences of the No Action Alternative: The no-action alternative would have no conceivable influence on aquatic wildlife or habitat.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): There is no aquatic wildlife or habitat potentially influenced by the proposed action. The two creeks, Whiskey and Evacuation associated with this project are ephemeral channels which do not support aquatic wildlife.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area is categorized by the Colorado Division of Wildlife as general winter range for mule deer and severe winter range for elk. These areas typically sustain big game use from September through April.

The mature pinyon-juniper woodlands located within and surrounding pads 42C-26, 5C-23, 6C-13 and 12C-19 are considered suitable nesting habitat for woodland raptors. Surveys were conducted on 6 April, 2006 by BLM biologists. The six remaining locations provide no structural vegetation capable of supporting nesting raptors.

Non-game wildlife using this area are typical and widely distributed in extensive like-habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

Environmental Consequences of the Proposed Action: The applicant anticipates that the wells would be drilled sequentially during the summer months. It is likely that this development would be accomplished prior to big game occupation of these winter ranges. Big game habitat disuse and elevated energy demands attending road proliferation received prominent attention in

the White River ROD/RMP. Access to these locations would require about 11.7 miles of new or substantially upgraded access that represents a substantive extension into some previously undeveloped areas. As a means of reducing long-term impacts to the utility of local deer and elk winter ranges and meeting road density objectives established in the White River ROD/RMP (i.e., road densities of 3 miles/square mile on big game ranges, White River ROD/RMP, page 2-29), a gating requirement is necessary to strictly and effectively limit vehicular traffic to that associated with well development and maintenance only.

Construction of well pads, their associated roads and pipelines for 6C-13, 12C-19, 5C-23 and 42C-26 would result in the direct loss of approximately 35 acres of mature pinyon-juniper woodlands. While the proposed action would represent an incremental and longer term reduction in pinyon-juniper habitat and subsequently utility for raptor nesting, implementation of the proposed actions would have no measurable influence on the abundance or distribution of woodland raptors at any landscape scale. Road and pad construction would incrementally reduce the current extent and utility of associated nongame bird and mammal habitats.

Environmental Consequences of the No Action Alternative: No immediate action would be authorized that would have potential to adversely modify terrestrial wildlife habitats or be capable of disrupting animal behavior within the project area.

Mitigation: --The use of interim reclamation techniques will be used to the extent practicable on this pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) disturbed areas are recontoured, revegetated, and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

--As a means of reducing long-term impacts to the utility of local deer and elk winter ranges and meeting road density objectives established in the White River ROD/RMP (i.e., road densities of 3 miles/square mile on big game ranges, White River ROD/RMP, page 2-29), any extension of impacts associated with vehicular traffic and road density from these locations should be countered with a gating requirement to strictly and effectively limit year-round vehicular traffic to that associated with well development and maintenance and BLM administration only. Those locations to be gated will be identified at a later date.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): The project area presently meets the public land health standards for terrestrial animal communities. As conditioned, the proposed action would have negligible long term influence on the utility or function of big game, raptor, or non-game habitats surrounding these wells. In an overall context, lands affected by the no-action or proposed action would continue to meet the land health standard for terrestrial animals.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			X
Forest Management			X
Geology and Minerals			X
Hydrology/Water Rights			X
Law Enforcement		X	
Noise		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations			X
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: BLM Roads 1234 and1227 as well as Rio Blanco County Road 25 will be affected. Motor vehicles in the project area are limited to existing routes yearlong.

Environmental Consequences of the Proposed Action: An increase in traffic would be expected along all affected routes while wells are being constructed. If wells are producers, very low periodic traffic will occur for the duration the wells are in operation. An increase in off road travel could also be expected off of newly developed roads and well pads.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

FIRE MANAGEMENT

Affected Environment: The actions proposed occur within the C7 Evacuation/Missouri Creeks fire management polygon, an area where fire is desired but there may be constraints that must be considered. This fire management polygon is an area where small (<200 acres) wildland fire events are desired, but there are constraints that must be considered.

Acres Disturbed within Pinyon/Juniper Fuel Type				
CS Fed Well #	**Well Pad (Acres)**	**Access Road (feet)**	**Pipeline (feet)**	**Totals**
42C-26-4S-104W	1.3	3568	3568	7.86
5C-23-4S-104W	0.94	2251	2251	5.14
6C-13-4S-104W	1.3	8070	7500	15.5
12C-19-4S-103W	0.94	3098	3098	3.84
			TOTAL	**32.34**

The table above identifies well locations and pipelines which involve approximately 3.2 miles of road and 3.1 miles of pipeline construction and about 4.48 acres of drill pad clearing for an approximate total of 32.34 acres of disturbance in pinyon/juniper stands.

The National Fire Plan calls for "firefighter and public safety" to be the highest priority for all fire management activities. In the pinion, juniper, and brush types common on the White River Resource Area, roads and other man-made openings are commonly used as fuel breaks or barriers to control the spread of both wildland and prescribed fires. By reducing the activity fuels created from this proposal, future fire management efforts in this area should be safer for those involved and more effective.

Environmental Consequences of the Proposed Action: Constructing the roads, pipelines and well pads will not change the management of fire in the C7 polygon. The proposed action will require the removal of a substantial amount of PJ vegetation (approximately 10-35 tons/acre). Due to the existing tree cover of pinion and juniper, there will be a need for the operator to clear some of these trees. If not adequately treated, these trees will result in elevated hazardous fuels conditions and remain on-site for many years. These accumulations of dead material are very receptive to fire brands and spotting from wind driven fires and can greatly accelerate the rate of spread of the fire front. The roads associated with this project may be used by the general public for a variety of uses, including access for fire wood gathering, hunting and other dispersed recreational activities. Increased public use of an area will nearly always result in an increased potential for man-caused wildland fires. If not treated the slash and woody debris will create an elevated hazardous dead fuel loading which could pose significant control problems in the event of a wildfire/ wildland fire use event. Additionally there would be greater threat to the public, oil field personnel, and fire management personnel.

Development of the oil and gas facilities with appropriate mitigation would not be expected to affect BLM's ability to use naturally occurring wildfires to achieve public land health objectives for the plant communities in the general area.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling

ball size. The mulch is evenly scattered across the surface and effectively breaks down the woody fuel thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

FOREST MANAGEMENT

Affected Environment:

The wells shown on the chart below are located within pinyon/juniper woodlands. For the most part these stands contain old growth characteristics. These woodlands are valuable locally as a source of firewood and posts for fence construction.

Acres Disturbed within Pinyon/Juniper Woodlands				
CS Fed Well #	**Well Pad (Acres)**	**Access Road (Acres)**	**Pipeline (Acres)**	**Totals**
42C-26-4S-104W	1.3	2.46	4.1	7.86
5C-23-4S-104W	0.94	1.6	2.6	5.14
6C-13-4S-104W	1.3	5.6	8.6	15.5
12C-19-4S-103W	0.94	1.1	1.8	3.84
			TOTAL	**32.34**

Environmental Consequences of the Proposed Action: The proposed project would remove approximately 35.04 acres of pinyon/juniper woodland. The permit holder is required to purchase this woodland material and dispose of it as described in mitigation. Following reclamation these woodlands would be colonized by pinyon and junipers within 30 years and would develop old growth characteristics between 150 and 300 years.

Environmental Consequences of the No Action Alternative: There would be no impacts.

Mitigation: From the White River ROD/RMP of 1997, Appendix B, 7; all trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six inches and disposed of by one of the following methods: Roads and Pads

- Trees must be cut before being dozed off the area of disturbance. Trees shall be cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance.
- Purchased trees may be removed from federal land for resale or private use. Limbs may be scattered off the area of disturbance but not dozed off.
- Chipped and scattered.

Pipelines: Trees will be dozed off the pipeline and windrowed. Following seeding the trees will be distributed throughout the disturbed area

GEOLOGY AND MINERALS

Affected Environment: The surface geologic formation of 6C-13-4S-104W is Green River; 42C-26-4S-104W and3-2-4-104 WD is Wasatch; with the remaining wells Mesaverde. Pioneer's targeted zone for the producing wells is the coal zones in the Mesaverde. The disposal NAV# 13-12-4-104 WD and 9-13-4-104 WD disposal zone is in the Navajo and 13-12-4-104 WD and 3-2-4-104 WD is the Castlegate. These wells are located on federal oil and gas leases COC-010179 COC-007868, COC-065144 and COC-010700. During drilling potential water, coal, oil and gas zones will be encountered from surface to the targeted zones.

Environmental Consequences of the Proposed Action: The cementing procedure of the proposed actions isolates the formations and will prevent the migration of gas, water, and oil between formations. Coal zones located in the Mesaverde will also be isolated during this procedure. Development of these wells will deplete the hydrocarbon resources in the targeted formation

Environmental Consequences of the No Action Alternative: None

Mitigation: None

HYDROLOGY AND WATER RIGHTS

Affected Environment: See water quality portion of this document.

Environmental Consequences of the Proposed Action: See water quality portion of this document.

Environmental Consequences of the No Action Alternative: See water quality portion of this document.

Mitigation: See water quality portion of this document.

PALEONTOLOGY

Affected Environment: Proposed actions associated with wells: #12C-19-4S-103W, #3-2-4-104, 9-13-4-104 43C-14-4S-104W #6C-13-4S-104W #5C-23-4S-104W #42C-26-4S-104W are located in an area generally mapped as the Mesa Verde Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I formation meaning it is known to produce scientifically important fossil resources.

Proposed action for well Nav. 13-12-4S-104WD are located in an area that appears to be mostly quaternary alluvium which is not generally considered fossiliferous. However the depth to the

underlying rock is not clearly know and the underlying rock is Mesa Verde Formation (Tweto 1979) which the BLM has classified as a Condition I formation meaning it is known to produce scientifically important fossil resources.

Proposed action associated with wells #13-12-4-104 and #11C-25-4S-104W are located in an area generally mapped as the Mesa Verde Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I formation meaning it is known to produce scientifically important fossil resources. However, based on the map submitted it appears that the well location may actually be located in some quaternary alluviums which are not fossiliferous.

Environmental Consequences of the Proposed Action: For the proposed action associated with wells #12C-19-4S-103W, Nav. #13-12-4S-104, #43C-14-4S-104W, #6C-13-4S-104W, #5C-23-4S-104W, #3-2-4-104, #9-13-4-104, and #42C-26-4S-104W: If it should become necessary to excavate into the underlying rock formation to construct the road, level the well pad or excavate the reserve/blooie pit there is a potential to adversely impact scientifically important fossil resources.

Proposed action associated with wells #13-12-4-104: is located may be in quaternary alluviums which should not involve impacts to fossil resources. However, if it should become necessary to excavate into the underlying rock formation to construct the road, level the well pad or excavate the reserve/blooie pit there is a potential to adversely impact scientifically important fossil resources.

Proposed action associated with well #11C-25-4S-104W is located in what may be quaternary alluviums of Whiskey Creek which is not likely to impact fossil resources. However, if it should become necessary to excavate into the underlying rock formation to construct the road, level the well pad or excavate the reserve/blooie pit there is a potential to adversely impact scientifically important fossil resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the No Action Alternative.

Mitigation: For all wells and associated routes and pipelines: A paleontological monitor shall be present prior to and during all excavations into the underlying rock formation required to construct the access road, level the well pad or excavate the reserve/blooie pit.

For all wells and associated routes and pipelines: The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be

used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

For the proposed action associated with wells #6C-13-4S-104W, #5C-23-4S-104W, #11-4S-104W, #12C-19-4S-103W, #43C-14-4S-104W, #3-2-4-104, and #42C-26-4S-104W:
A paleontological inventory of all exposed rock outcrops in the well pad and access route are shall be completed by a BLM approved paleontologist with the results and any recommended mitigation submitted to the BLM prior to the initiation of construction.

RANGELAND MANAGEMENT

Affected Environment: The wells are located on the Evacuation Creek allotment. The Evacuation Creek allotment is grazed by cattle on a year round basis, with the project area being used during the spring and fall.

Environmental Consequences of the Proposed Action: Overall the loss of forage to all of the wells would be less than one Animal Unit Month because the majority of the acreage disturbed is within areas previously disturbed or are within the pinyon/juniper association which provides little forage for livestock. With reclamation including interim reclamation any loss of livestock forage would be mitigated. Of greater concern is the report of knapweed in the area which without control would spread throughout the area and be expensive to control.

The construction of pipelines has in the past restricted livestock movements and trapped livestock in open trenches. With the mitigation described below this problem should be corrected.

Environmental Consequences of the No Action Alternative: There would be no impacts on rangeland management because of the no action alternative.

Mitigation: The operator will be required to maintain or replace the cattleguards if their operations are found to have damaged them. The operator will also be required to clean the cattleguards as needed, and notify the BLM when work on the cattleguards is completed.

During pipeline construction open trench is limited to 200 feet on the total project.

The permit holder is to complete and inventory for noxious weeds as specified in the INVASIVE, NON-NATIVE SPECIES section.

Interim reclamation is to be completed the fall after the completion of drilling. The pad is to be pulled back to the deadman and drill seeded with the required species. Pipelines will be seeded

the fall after construction, or if constructed during the winter will be broadcast seeded immediately after grading the site and prior to March 1.

REALTY AUTHORIZATIONS

Affected Environment: The proposed action has 4 wells that will require a right-of-way authorization.

Environmental Consequences of the Proposed Action: The proposed action has 4 water disposal wells with associated pipelines. Well #3-2-4-104 WD, 9-13-4-104 WD, 13-12-4-104 WD, and NAV 13-12-4-104 WD are all water disposal wells with pipelines that will tie into the existing water pipeline system. This action will be an amendment to Pioneer's existing water disposal system.

Environmental Consequences of the No Action Alternative: Under the no action alternative, these wells would not be drilled and then the right-of-way would not be required.

Mitigation: The mitigation measures of the original right-of-way grant remain in full force and effect and will be applied to this amendment.

The Conditions of Approval for each well will be incorporated into and made a part of the right-of-way amendment.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project areas and the surrounding Evacuation Creek most closely resemble Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

Environmental Consequences of the Proposed Action: The public will lose approximately 60 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads, roads, and re-entry to abandoned wells, an increase in traffic could be expected increasing the likelihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment. It could be suggested that the increase in human influences and associated activities may result in the loss of recreation experiences and settings described by a SPM and modify the area's ROS class that may resemble that of Roaded Natural (RN). Roaded Natural is characterized as a natural setting where modifications, such as constructed roads and other human facilities are easily noticed although remain visually subordinate.

Environmental Consequences of the No Action Alternative: No loss of dispersed recreation potential and no impact to hunting recreationists.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: The proposed actions would be located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Environmental Consequences of the Proposed Action: Two of the well pads in the proposed action (# 9-13-4-104WD, NAV # 13-12-4-104WD) would be located within view of a casual observer traveling the unpaved Rio Blanco County road (RBC Rd) 25 (West Evacuation Creek), which is located along the bottom of the drainage, and would be the route most traveled by a casual observer that is accessible to the public. Travel activity in this area is comprised primarily of energy related support services, hunters during the big game seasons, and local ranchers. There are other existing producing well locations along this route and the proposed action for these two well pads would not dominate the view or attract undue attention. The other eight locations in the proposed action would not be visible from RBC Rd 25, since they would either be accessible through private land or located above the view shed of a casual observer traveling along RBC Rd 25. By utilizing low profile production equipment and painting all above ground facilities Juniper Green to blend with surrounding and back drop vegetation, the level of change to the characteristic landscape would be less than moderate, and the objectives of the VRM III classification would be retained.

Environmental Consequences of the No Action Alternative: There would be no environmental impacts.

Mitigation: All permanent (on-site for six months or longer) structures, facilities, and equipment placed on-site shall be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

CUMULATIVE IMPACTS SUMMARY: This action is consistent with the scope of impacts addressed in the White River ROD/RMP. The cumulative impacts of these activities are addressed in the White River ROD/RMP for each resource value that would be affected by the proposed action.

REFERENCES CITED:

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Tweto, Odgen
1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Robert Fowler	Rangeland Management Specialist	Invasive, Non-Native Species
Lisa Belmonte	Wildlife Biologist	Migratory Birds
Lisa Belmonte	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa J. Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Lisa Belmonte	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Robert Fowler	Rangeland Management Specialist	Vegetation
Lisa Belmonte	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Robert Fowler	Rangeland Management Specialist	Rangeland Management
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources
Melissa J. Kindall	Range Technician	Wild Horses

Finding of No Significant Impact/Decision Record (FONSI/DR) CO-110-2006-050-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve the proposed action with the mitigation listed below. The Proposed Action is in concert with the objectives of the White River ROD/RMP in that it would allow development of federal oil and gas resources in a manner that provides reasonable protection for other resource values. Protection for other resource values will be assured by implementation of the mitigation measures described below and attached to the APDs as Conditions of Approval.

MITIGATION MEASURES:

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust), vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing the roadway with gravels will also help mitigate production of fugitive particulate matter.

2. To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soils associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilize on slopes exceeding 5% (e.g. fill slopes). If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

3. In addition to the applicant committed mitigation in the proposed action the applicant will:

(1) Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.
(2) For Proposed action associated with well #12C-19-4S-103W: Site 5RB 5195 shall be avoided by all construction and maintenance activity associated with the drilling and operations of the 12C-19-4S-103W well pad.
(3) For Proposed action associated with well #13-12-4S-104W: Site 5RB 4948 must be strictly avoided. All personnel work activity associated with this pad for the life of the well are strictly limited to the pad location only.
(4) For Proposed action associated with well 43C-14-4S-104W: Sites 5RB 4308, 4309 and 4310 must be avoided by all construction and maintenance associated with the construction of the access road and well pad. Pioneer and its successor and/or assigns will be responsible for ensuring the integrity of the sites in not compromised or damaged as a result of their development.
(5) For Proposed action associated with well #6C-13-4S-104W: Site 5RB 5194 must be avoided by all construction and maintenance associated with the well pad for the life of the pad. Pioneer and its successors or assigns will be responsible for ensuring that the integrity of the site is not compromised for the life of the well.

4. The fall of 2005 reports were received that an unspecified knapweed had been located in Davis Canyon and was associated with field development. The operator is responsible for inventorying roads, pipelines and pads within their unit for noxious weeds and providing BLM with a report identifying species present, location and size of infestation, prior October 1, 2006.

5. From the White River ROD/RMP of 1997, Appendix B, Application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.
Seeded species used in reseeding disturbed areas will be based on the seed mixes identified in table B1 and B2. These mixes are based on range sites as determined by soils. Use Standard Seed Mix #2 listed below.

Table B-1. Standard Seed Mixes

Seed Mix #	Species (Variety)	Lbs PLS/ Acre	Range sites
2	Western wheatgrass (Arriba) Pubescent wheatgrass (Luna) Russian wildrye (Bozoisky) Crested wheatgrass (Fairway/Ephraim) Yellow sweetclover (Madrid) Fourwing saltbush (Wytana/Rincon)	3 2 2 2 0.5 2	Alkaline Slopes, Clayey Foothills, Clayey Slopes, Claypan, Mountain Shale

6. It is recommended that pads 11C-25 and 43C-14 be constructed prior to 42C-26, 5C-23, 6C-13 and 12C-19. Delaying construction on those pads associated with mature pinyon-juniper woodlands (latter four) may potentially reduce nest failure during the breeding season.

7. It will be the responsibility of the operator to eliminate migratory bird access to reserve pits that store or are expected to store fluids that pose a risk to these birds (e.g., waterfowl, wading birds, raptors, and songbirds) during drilling and completion activities and until such pits are reclaimed. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird access to pit contents and meet BLM-approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to when drilling activities are expected to begin. The BLM approved method will be applied within 24 hours after drilling activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

8. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

9. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, and Industrial Wastewater/Produced Water Permits). The operator will also be required to provide the BLM with documentation that all required permits were obtained.

10. Surface Water: All surface disturbing activities will strictly adhere to "Gold Book" fourth edition surface operating standards for oil and gas exploration and development (copies of the "Gold Book" fourth edition can be obtained at the WRFO). Oil and gas development activities require a stormwater discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division, for construction associated with well pads, pipelines, roads and other facilities. As a condition of the permit, a Stormwater Management Plan (SWMP) would be developed showing how Best Management Practices (BMPs) are to be used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office and to implement the BMPs in that plan as on-site conditions warrant.

The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant. Furthermore, to mitigate additional soil erosion at the well pad, interim reclamation will be required as outlined in the Air Quality mitigation section above.

11. Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of gas by installation and cementing of surface and intermediate casing. Produced water will be disposed of via subsurface injection into the Navajo and Castlegate sandstones due to poor water quality to mitigate potential adverse impacts on valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

12. The operator shall comply with "Gold Book" fourth edition surface operating standards for constructing well pads, pipelines and access roads (copies of the "Gold Book" fourth edition can be obtained at the WRFO). Surface disturbing activities occurring on identified CSU-1 "fragile soils" (see affected environment) will be allowed only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. Interim reclamation will be required as addressed in the Air and Water Quality portions of this document. Vegetation removed for installation of pipelines will be promptly spread back over the disturbed area following construction and seeded as outlined in the vegetation section of this document. To mitigate contamination of soils and local ground water, environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of impermeable matting under equipment (tanks, pumps, or other equipment used in handling hazardous liquids) is suggested to intercept such contaminants prior to contacting soils. Given the salt concentration of the impacted soils (see affected environment), the operator will be responsible for monitoring salts leaching from soils. If large salt deposits begin to appear, the operator will notify BLM, together they will coordinate the application of best management practices to help mitigate the problem. Complete reclamation will follow abandonment of well pad. Access roads, pipelines, and well pads will be recontoured and 100% of disturbed surfaces will be revegetated with the suggested seed mixture as outlined in the vegetation section of this document.

13. The use of interim reclamation techniques will be used to the extent practicable on this pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) disturbed areas are recontoured, revegetated, and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

14. As a means of reducing long-term impacts to the utility of local deer and elk winter ranges and meeting road density objectives established in the White River ROD/RMP (i.e., road densities of 3 miles/square mile on big game ranges, White River ROD/RMP, page 2-29), any extension of impacts associated with vehicular traffic and road density from these locations should be countered with a gating requirement to strictly and effectively limit year-round vehicular traffic to that associated with well development and maintenance and BLM administration only. Those locations to be gated will be identified at a later date.

15. The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. The mulch is evenly scattered across the surface and effectively breaks down the woody fuel thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the

trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

16. From the White River ROD/RMP of 1997, Appendix B, 7; all trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six inches and disposed of by one of the following methods: Roads and Pads

- Trees must be cut before being dozed off the area of disturbance. Trees shall be cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance.
- Purchased trees may be removed from federal land for resale or private use. Limbs may be scattered off the area of disturbance but not dozed off.
- Chipped and scattered.

Pipelines: Trees will be dozed off the pipeline and windrowed. Following seeding the trees will be distributed throughout the disturbed area

17. For all wells and associated routes and pipelines: A paleontological monitor shall be present prior to and during all excavations into the underlying rock formation required to construct the access road, level the well pad or excavate the reserve/blooie pit.

18. For all wells and associated routes and pipelines: The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

19. For the proposed action associated with wells #6C-13-4S-104W, #5C-23-4S-104W, #11-4S-104W, #12C-19-4S-103W, #43C-14-4S-104W, #3-2-4-104, and #42C-26-4S-104W:
A paleontological inventory of all exposed rock outcrops in the well pad and access route are shall be completed by a BLM approved paleontologist with the results and any recommended mitigation submitted to the BLM prior to the initiation of construction.

20. The operator will be required to maintain or replace the cattleguards if their operations are found to have damaged them. The operator will also be required to clean the cattleguards as needed, and notify the BLM when work on the cattleguards is completed.

21. During pipeline construction open trench is limited to 200 feet on the total project. Interim reclamation is to be completed the fall after the completion of drilling. The pad is to be pulled back to the deadman and drill seeded with the required species. Pipelines will be seeded the fall after construction, or if constructed during the winter will be broadcast seeded immediately after grading the site and prior to March 1.

22. The mitigation measures of the original right-of-way grant remain in full force and effect and will be applied to this amendment.

23. All permanent (on-site for six months or longer) structures, facilities, and equipment placed on-site shall be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

NAME OF PREPARER: Keith Whitaker

NAME OF ENVIRONMENTAL COORDINATOR: Caroline P Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: Kent A Walter
Field Manager

DATE SIGNED: 05/16/06

ATTACHMENTS: Location map of the proposed action.

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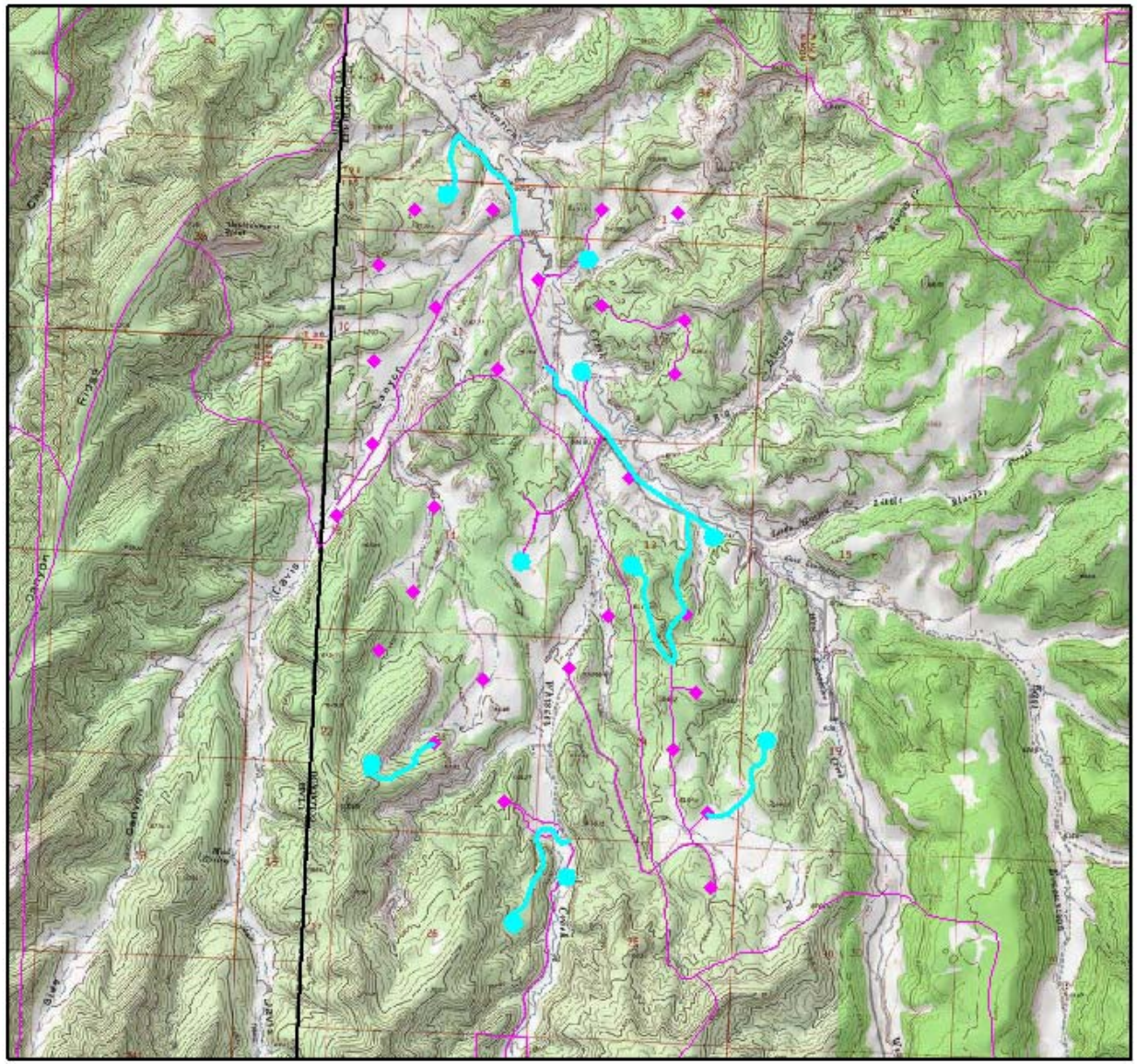

Field office boundary
Projects: point
Projects: line
Projects: polygon

0 0.2 0.4 0.8 1.2
Miles

5/15/2006